

TWENTY-FIFTH

ANNUAL REPORT

OF THE

SANITARY CONDITION

OF

BOOTLE,

BY THE

MEDICAL OFFICER OF HEALTH.

BOOTLE :
BOOTLE PRINTING AND PUBLISHING CO., LTD., 107, BALLIOL ROAD.

1898.

With Compliments

from the

Medical Officer of Health.

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BOROUGH OF BOOTLE.

DURING the year 1897 the Returns of the Local Registrar, Mr. Edwin Smith, record 1748 *Births* and 1037 *Deaths* within the Borough, the natural increase of the population being therefore 711. On comparing these numbers with those in 1896, it will be seen that there was a decrease in the number of births and a small increase in the number of deaths, viz:—a decrease of 11 in the number of births, and an increase of 11 in that of deaths, the natural increase in the past year having been only 22 less than in 1896.

POPULATION.

During the past year I have not felt justified in estimating the population at more than 52,000, notwithstanding that a large number of new houses have been erected and occupied. My reason for not making a larger estimate has been that I found the number of births was not increasing. As I observed in my last annual report, there is in my opinion a great need of a quinquennial census in a Borough like Bootle, where a large proportion of the population is of a migratory and therefore of a fluctuating character. As a proof of this I may mention that although there has been a slight decrease in the number of births yet the birth-rate of Bootle in 1897 was 3 in the 1,000 in excess of the average of the 33 large towns, which would seem to indicate a larger population than 52,000. The following table shows the number of births and deaths within the Borough, during the 10 years 1887-1896 (inclusive), and in the year 1897.

Years.	Births.	Deaths.	Years.	Births.	Deaths.
1887 ...	1595 ...	920	1892 ...	1710 ...	951
1888 ...	1681 ...	820	1893 ...	1828 ...	1153
1889 ...	1668 ...	886	1894 ...	1660 ...	917
1890 ...	1706 ...	1017	1895 ...	1823 ...	1075
1891 ...	1780 ...	1165	1896 ...	1759 ...	1026

1897—Births 1748--Deaths 1037.

BIRTHS.

The number of Births registered in Bootle in 1897 was 1748, of which 869 were males and 879 females. Table No. 1 shows the variation of the number of births registered in each month of the year, the largest number (174) being in November, and the smallest (126) in June. The total number was 11 less than that in 1896, and the birth-rate was equal to 33·6 per 1,000 and exceeded that of the 33 large towns by 3, and that of England and Wales by nearly 4 in the 1,000.

DEATHS.

The number of deaths registered in Bootle in 1897 was 1,037, of which 539 were males and 498 females, so that the deaths of males exceeded those of females by 41. The total number was 11 more than in 1896 and the *Death Rate* of persons registered in Bootle was 19·96 per 1,000. As, however, 74 paupers said to belong to Bootle died in the Walton and Mill Road Workhouses of the West Derby Union, and thus died "outside the district," and 54 deaths of persons not belonging to Bootle occurred "within the district," principally in the Bootle Borough Hospital and in the Corporation Hospital for Infectious Diseases, Linacre, the difference between these numbers, viz. 20, has to be added to the 1,037 deaths before mentioned. The death-rate was without this addition 19·96, but with this addition 20·32 per 1,000, the latter being 0·19 in excess of that in 1896. The death-rate was with this addition, a little over 1 in the 1000 in excess of that of the average of the 33 large towns, which was 19·1. The death-rate in England and Wales was 17·4 per 1,000. Of the 74 paupers "belonging to Bootle" who died in the Workhouses there were admitted 1 in 1885, 1 in 1889, 1 in 1892, 2 in 1893, 1 in

1894, 4 in 1895, 16 in 1896, and 48 in 1897. I think there can be no doubt that a considerable number of these deaths were of persons of migratory habits, seeking employment in the docks or elsewhere, others being of the vagrant class admitted from Common Lodging Houses, and having no fixed residence, whereas, on the other hand, I think it is very probable that many deaths occurring in the town (not in the Hospital) may have been of visitors or persons "not belonging thereto."

INFANT MORTALITY.

The deaths of children under 5 years of age within the Borough amounted to 527, and thus comprised 50·8 per cent of the whole deaths. The total number was 18 more than that in 1896 and the percentage about one more. The deaths of Infants under one year were 349 and were 25 more than in 1896. They were 199·6 per 1,000 of the registered births, in other words 19·9 (or nearly 20) per cent of those born died within the first year of life, a percentage 1·5 greater than that in 1896. The largest number of deaths under 5 years occurred in July, when 93 children died, and of these 63 were infants under one year. The greatest percentage of children who died in one month under 5 years was also in July. The largest number of deaths of infants under one year occurred in August, when 68 infants died. By the published returns of Infant Mortality measured by the proportion of deaths under one year to the registered births, I find that in the 33 large towns the average mortality was 176, and in the whole of England and Wales 156 per 1,000.

Analysis of the Causes of Deaths—In the same manner as in former years I will now review the causes of deaths in Bootle during the past year. On the whole I think it is satisfactory to note that considering the rather large Infant Mortality, the number of deaths registered in Bootle was only 11 more than in 1896, and the total mortality (*i.e.* with the addition of the excess of deaths in the Workhouses over those of non-residents who were known to die in Bootle) was only 10 more than in 1896, and also the total death-rate only exceeded the average death-rate of the 33 large towns by a little over 1 in the 1,000. In order to show this clearly, I will first compare the death-rates in Bootle in the 4 quarters of the year with the approximate death-rates of the 33 large towns and of the whole of England and Wales.

Bootle.			33 Large Towns.			England and Wales.		
1st Quarter	16	31	1st Quarter	19	2	1st Quarter	18	8
2nd „	16	28	2nd „	16	9	2nd „	16	3
3rd „	27	63	3rd „	21	2	3rd „	17	8
4th „	19	46	4th „	19	0	4th „	17	0

On comparing the above death-rates, it is plainly perceptible that if it had not been for the large preponderance of the death-rate in the 3rd quarter, the death-rate of Bootle would have been smaller than that of the 33 large towns, for the death-rates of the 1st and 2nd quarters are considerably less than those of the 33 large towns, the 1st quarter being 3 in the 1,000 less. As a matter of fact some of the large towns have even a greater death-rate than that of Bootle. I will now compare the infant mortality of Bootle, measured by the proportion of deaths under one year to registered births, with that of the 33 large towns, and of the whole of England and Wales, in the 4 quarters of the year.

Bootle.			33 Large Towns.			England & Wales.		
1st Quarter	137	6	...	139	...	141		
2nd „	147	5	...	128	...	124		
3rd „	363	4	...	278	...	213		
4th „	147	1	..	160	...	145		
Total mean of the 4 quarters			...	176	...	156		

This tabular statement shows still more forcibly that the cause of the total death-rate being a little over 1 in the 1,000 in excess of the 33 large towns, was principally due to the large number of infantile deaths during the year, especially in the 2nd and 3rd quarters. There is no doubt that the large infant mortality in the 3rd quarter was, in a great measure, due to the large number of deaths from that fatal infantile disease—diarrhœa, the total number of deaths from diarrhœa in this quarter having been 138, of which 129 were children under 5 years, a very large proportion being infants under 1 year. On comparing the total mortality in Bootle in 1897 with that of the previous year, it will be noticed that there was a decrease in the number of deaths from 5 of the principal zymotic diseases in 1897, viz. :—a decrease of 17 from measles, 8 from scarlatina, 2 from diphtheria, 4 from enteric fever, and 1 from whooping cough, and there was no death from small-pox. With regard to other diseases and causes of death, there was a decrease in the number of deaths from the following diseases :—3 from puerperal fever, 2 from erysipelas,

10 from cancer, 35 from diseases of brain, 4 from diseases of heart, 7 from diseases of stomach, liver, &c., 1 from diseases of kidneys, 22 from premature birth, 3 from deaths through violence, &c., and there was a decrease of 12 in the number of deaths that were "uncertified." On the other hand, there was an increase of 3 deaths from influenza, 30 deaths from tubercular diseases (including an increase of 18 from phthisis), and 21 from diseases of lungs and air passages. According to the Registrar's returns, there was a decrease of 3 in the number of deaths in the Bootle Borough Hospital, and a decrease of 16 in the Corporation Hospital for infectious diseases. There was a decrease of 43 in the number of paupers attended by the District Medical Officer during the year, the numbers in the 4 quarters having been as follows:—1st quarter 221, 2nd quarter 150, 3rd quarter 193, 4th quarter 206, total 770. Table No. 4 gives a summary of the deaths from the various classes of diseases, including the important class of zymotic diseases, the mortality from everyone of which diseases is separately enumerated. In accordance with the order of the Local Government Board, I will now refer to the sanitary work accomplished during the year, and supply information on each of the 7 principal zymotic diseases, and give a summary of the action taken, or which I have advised the Sanitary Authority to take, to prevent the spread of these diseases.

ZYMOTIC DISEASES.

The number of deaths from the 7 principal zymotic diseases, viz.:—small-pox, measles, scarlatina, diphtheria, whooping cough, fevers and diarrhœa (after deducting 5 deaths of "persons outside the district," viz.:—1 from scarlatina, and 4 from enteric fever, occurring in the Hospital for Infectious Diseases) was 218, which number was 49 more than that in 1896. Of this number 186 were of children under 5 years. The total zymotic death-rate was 4.19 in the 1,000, but if the death-rate from diarrhœa is deducted, that for the 6 other zymotics numbers only 1.25. The total number (218) of these zymotic diseases was very nearly 47 in excess of the average of the preceding 10 years, but this excess was entirely due to the number of diarrhœa deaths. The number of infectious or contagious diseases notified to me during the year was 497, which number was 31 less than that in the preceding year, which was 528. The diseases notified were as follows:—scarlatina 245, diphtheria 16, membranous croup 5, typhus fever 7, enteric fever 149, puerperal fever 3, simple continued fever 5, erysipelas 67. The comparison of the approximate

death-rates from these diseases in Bootle with those in the 33 large towns and in England and Wales was as follows:—

			Bootle.		33 Large Towns.		England and Wales.
Small-pox	...	...	—	...	—	...	—
Measles...	...	...	0·269	...	0·55	...	0·40
Scarlatina	...	...	0·23	...	0·18	...	0·14
Diphtheria	...	...	0·096	...	0·31	...	0·24
Whooping Cough	...	...	0·269	...	0·40	...	0·35
Fevers ...	...	...	0·384	...	0·18	...	0·16
Diarrhœa	...	...	2·942	..	1·24	...	0·86
			—		—		—
Totals	...	...	4·19	...	2·86		2·15

On comparing these death rates it will be noticed that the reason of the total zymotic death-rate in Bootle being 1·33 per 1,000 in excess of that in the 33 large towns was entirely due to the increased death-rate from diarrhœa, for the total death-rate of the other 6 zymotics in Bootle was 0·38 less than that of the other 6 zymotics in the larger towns. It will be seen by the Local Government Board's Table B, that of the 497 cases notified 150 were from Derby Ward, 187 from Knowsley Ward, and 160 from Stanley Ward, therefore the notifications from Knowsley Ward exceeded those from Derby Ward by 37, and those from Stanley Ward by 27, whilst the notifications from Stanley Ward were only 10 more than those from Derby Ward. There were 33 more notifications from Derby Ward during the past year than there were in 1896, the increase being due to the large number of cases of scarlatina in 1897 in that ward. The number of deaths from these wards in the hospital were 6 from Derby Ward (all scarlatina), 7 from Knowsley (3 scarlatina and 4 enteric) and 6 from Stanley (1 scarlatina, 3 enteric, 1 diphtheria and 1 phthisis), total 19. The number of deaths of persons from these notifiable zymotic diseases that occurred in their homes were as follows:—Derby Ward 4, Knowsley Ward 8, Stanley Ward 7. The 4 in Derby were 3 from enteric fever, and 1 from diphtheria. The 8 in Knowsley were 1 from scarlatina, 1 from diphtheria, and 6 from enteric fever. The 7 in Stanley were 1 from scarlatina, 2 from diphtheria, and 4 from enteric fever. The total number of deaths of persons from these diseases both in their homes and in Hospital was therefore as follows:—Derby Ward

10, Knowsley Ward 15, and Stanley Ward 12, Total 37. The number of deaths in the Linacre Hospital from the out-townships was 6, viz. :— 4 (including 1 stated to be from pneumonia) from Waterloo and Seaforth and 2 from Litherland.

HOSPITAL FOR INFECTIOUS DISEASES.

The total number of cases treated in the Isolation Hospital for Infectious Diseases at Linacre was 288, which number was 29 less than the number treated in 1896. Of the total number 234 were residents and 54 non-residents. Of the residents admitted and treated in the hospital 74 were from Derby Ward, 94 from Knowsley Ward, and 66 from Stanley Ward. Of the non-residents 42 were from Waterloo and Seaforth, 9 from Litherland, 1 from Ince Blundell, and 2 from West Derby. There was thus a decrease of 14 cases from Bootle and 15 from the out-townships. There was an increase of 13 cases from Derby Ward, but a decrease of 9 cases from Knowsley Ward, and 18 from Stanley Ward. The Local Government Board's Table A, shows a very satisfactory reduction of the total number of deaths in the hospital, when compared with the deaths in 1896, the total number of deaths in 1896 having been 41, whilst the deaths in 1897 were only 25, a decrease of 16. Of the total deaths in 1897, 19 were from Bootle and 6 from the out-townships, giving a total death-rate of 8·68 per cent. The percentage of deaths from the Bootle cases was about 8·68, and that from the out-townships about 11·1. The usefulness of this invaluable institution containing accommodation for smallpox, scarlatina, diphtheria, typhus and enteric fever, has been again abundantly shown during the past year. The rate of mortality is not always a fair test of the treatment of infectious cases in hospital, for patients are often sent in such an advanced stage of the disease, and their condition has been so deteriorated by their removal, that recovery has thus been rendered almost hopeless, and the consequent mortality produced by these advanced cases have often rendered the death-rate higher than it would be if all cases had been admitted in the earlier stages of the disease. This is more particularly exemplified in enteric (or typhoid) cases, where diagnosis in the earlier stages of the disease is often very difficult. It is therefore very satisfactory to note that notwithstanding the dangerous character of many of the cases admitted, the total death-rate in the hospital last year had decreased from about 13 to 8·6 per cent, and I think there is evidence to show that the

isolation, skilled treatment, good nursing and proper dietary, together with the knowledge of the patients being generally well cared for, have all contributed to make this hospital more appreciated by the public and more popular than ever it was before. I may here state that the resignation of the Medical Superintendent, Dr. C. V. McCormack, having been received on the 15th November, the Health Committee recommended that Dr. Thomas Jones be appointed, and this recommendation was confirmed by the Council on the 8th December.

DISINFECTING APPARATUS.

The apparatus used at the disinfecting station in Linacre is "Washington Lyon's Patent," which can furnish a heat of 250° by superheated steam. Having been in use for many years I think there can be no doubt of its efficiency. The following is a list of the various articles disinfected during the year:-- Mattresses, 545; beds, 451; bolsters, 356; pillows, 689; sheets, 531; blankets, 540; quilts, 470; carpets, 192; wearing apparel, 688; miscellaneous articles, 391—total, 4,853. There is a man specially appointed to take charge of the apparatus, and separate vans are used for the conveyance of these articles to and from the station. Occasionally when the articles are exceptionally foul, or have been used by patients suffering from very infectious diseases, they are destroyed, and replaced or allowed for at the cost of the Sanitary Authority. In the case of a slight outbreak of typhus fever, which occurred in January and February, in which 7 persons were attacked and sent to Hospital, the destruction of the bedding, &c. of these persons was for this reason carried out. Infected houses and rooms are fumigated by sulphurous acid gas, and carbolic powder and liquid are largely used around infected premises, foul middens, drains, &c. "Daley's Disinfecting Box" has also been largely used in Bootle during the past year to disinfect infected persons in their own houses. This apparatus can be wheeled through any ordinary door into a house, and is made so that it can most effectually disinfect either adults or children through having a movable floor. I shall now proceed to the consideration of the seven principal zymotic diseases, and in the observations which I shall make respecting them I shall state all that could be discovered with reference to the origin and extension of these diseases, together with the advice given and the measures taken to prevent their spread. The first zymotic I will remark on is

SMALL-POX.

Fortunately there is very little to state with respect to this dreaded zymotic, as no case was notified during the year and no death from it occurred. I may state however that a special pavilion is always kept in reserve to receive any case of small-pox that might unexpectedly be notified, and this pavilion is not allowed to be used for any other infectious disease. Unfortunately on account of the vicinity of the docks, we are liable at any time to be called upon to isolate a case of small-pox, which disease has so long an incubation period, that a person might leave the United States (or elsewhere) to all appearance free from disease, and after returning to his home in Bootle, symptoms of small-pox might then be observed in him, and the disease be fully developed in a day or two afterwards. A very useful and often a very effectual precaution is taken in this port to prevent as far as possible such a contingency. If any vessel arriving in the port is found to have a case of small-pox on board, Dr. Hope, the Medical Officer of Health for the Port Sanitary Authority, always sends word to me the names and residences of any persons who have arrived by the same vessel, and have returned to their homes in Bootle. After this information, I perhaps need hardly say one of our Sanitary Inspectors regularly visits every day the residences of these persons, until the danger of a case occurring has passed away. I can testify that this invaluable precaution has at least in one instance (in 1896) prevented an outbreak of small-pox in this borough.

MEASLES.

This disease was epidemic in the last half of the year, when 12 deaths were registered from it, viz.: 4 in July, 1 in August, 3 in October, 2 in November, and 2 in December, and there was one death from it in February and 1 in March. There were thus 14 deaths from it during the year, and the School Board visitors reported a large number of cases preventing the children from attending the Public Schools. The total number of deaths from it, however, was only half the number in 1896, but was 2 more than the deaths in Bootle persons from scarlatina. The number was 6·7 less than the average of the preceding 10 years, and the death-rate from it was 0·27, which was 0·28 less than the average death-rate of the 33 large towns. Although this disease is said to be highly infectious for 3 or 4 days before the rash appears, still the knowledge of the existence of the disease in any particular

household is important, as even then the Sanitary Authority may order isolation and prevent children in the house from attending school, and so check the spread of the disease. It appears to me also that instructions should be given to all persons to abstain from work whose occupation is of a sort considered likely to the further propagation of measles, if they should reside in houses invaded by this disease, such occupations for example as hawking, milk-selling, teaching in schools, dressmaking and tailoring. The apathy of the public with regard to measles is truly surprising, so much so, indeed, that the householder often does not call in a medical attendant for the sick children, and it is only when probably the death of one of the members of the family occurs, that he is made aware of the serious character of this disease. It ought never to be forgotten that measles has in recent years caused more deaths than small-pox, scarlatina, diphtheria, or fevers, and is often only really exceeded by diarrhoea. It ought also to be remembered that it is especially fatal to infants in the second year of life, and that adults are often frequently attacked. The *sequelæ* of the disease are also often very serious, as inflammation of the eye, or of the internal ear, producing blindness or deafness, are not infrequent results of the disease, when a child is supposed to have recovered.

SCARLATINA.

This zymotic has, for many years, been more or less epidemic in Bootle, though I am glad to say it was not so fatal during last year as in 1896, the mortality from it having dropped from 20 to 12, after deducting one death from the township of Waterloo in the Infectious Hospital. The number of notifications of this disease last year was 245, a decrease of 52 when compared with those in 1896. The percentage of deaths to notifications last year was 4·9, whilst in 1896 the percentage was 6·7. Generally speaking the disease was not of a virulent type last year, but there were 2 children from one family who died very suddenly both in April and December. Table No. 2 shows the number of notifications of scarlatina in each month of the year, and table No. 4 gives the number of deaths (including the Waterloo case) in the months in which fatal cases occurred. It will be noticed that no fatal case occurred in May, June, July, October and November (5 months), and if it had not been for the unexpected mortality in December, the total number of deaths would have been below 10. The number of cases admitted into Hospital from Bootle in 1897 was 133, and that from the out-townships 33, making a total

of 166. The number admitted from Bootle in 1896 was 160, and that from the out-townships 40, making a total of 200. The numbers admitted in 1897, both from Bootle and from the out-townships, were therefore less than in 1896. Of the total number of scarlatina cases notified in Bootle (245), 133 or more than one half were removed to hospital, which is a large proportion of the cases, and therefore a gratifying fact to note, as I think it shows the popularity of the hospital with the public generally. The number of deaths (12) from Bootle cases was 11·1 less than the average of the preceding 10 years, and the death-rate was 0·23, which was slightly in excess of that of the 33 large towns, which was 0·18. A supply of disinfectants is sent to every house during the whole time the infection exists, and repeated visits are made by an Inspector to see that all necessary precautions are carried out. Every house is disinfected at the termination of the case or after its removal to Hospital. The disinfection consists of burning sulphur in the rooms after stripping of paper from the walls, and the carrying away in a light van of all bedding, clothing, &c., to be thoroughly disinfected by the "Washington Lyons" disinfector at the station. Instructions are also given that all floors, furniture, &c., are to be thoroughly washed with a disinfectant.

DIPHTHERIA.

The number of notifications of this disease was 16, and the deaths 5. The former was one less, and the latter two less than in 1896. The death rate was 0·096, and was 0·21 less than the average of the 33 large towns. Five cases were treated in the isolation hospital, and of these one died. Of the total deaths, 4 were of children under 5 years of age. The total deaths were 3·3 below the average of the preceding 10 years. Bootle, as a rule, does not suffer from a high mortality rate for diphtheria. I may mention that this disease and croup are considered by many medical men as identical.

CROUP.

The number of cases notified as membranous croup was only 5, and as the number of deaths registered was 6, it is evident that many cases of this disease were not notified. My impression is that many medical practitioners forget that membranous croup is a notifiable disease.

WHOOPIING COUGH.

The number of deaths from whooping cough registered in Bootle was 14, which was 1 less than in 1896. With the exception of one, the deaths were all of children under 5 years of age, and were 11·4 below the average of the preceding 10 years. The death-rate was 0·269, which was 0·131 below the average death-rate of the 33 large towns. The disease was more or less prevalent during the year, although the number of fatal cases are comparatively small. The months in which fatal cases occurred were January, March, April, May, June, July, September, November and December, when 2, 1, 1, 2, 2, 1, 1, 1, and 3 deaths respectively were registered. As whooping cough is a highly infectious zymotic, I think it is fortunate that so few deaths occurred, particularly when it is remembered that no prevention measures are taken in any town to check the spread of it, and children are frequently to be seen in the streets suffering from it.

CONTINUED FEVERS.

Typhus—Seven cases of this very infectious fever were notified, 2 in the latter part of January, and 5 in February. All the cases were removed as soon as notified to the Infectious Hospital at Linaere, the bedding and some other articles were burnt, and every precaution was taken to prevent the spread of the infection, but not before nearly all the inmates of a cellar were infected by it. Fortunately by skilful treatment in the hospital all the patients recovered.

Enteric (or Typhoid)—The total number of enteric cases notified during the year was 149, but 5 cases of simple “continued fever” were also notified, and as I have reasons for believing that these were of an enteric character, I think it is advisable to include these 5 cases in the list of enteric cases, which would thus amount to a total of 154. The number of deaths registered was 24, but 4 of these were persons from the out-townships, so that the total number of deaths of Bootle persons was 20, or 4 less than in 1896. There were cases notified in each month of the year, but including the 5 so-called cases of “continued fever” the largest numbers notified were in July, August, September, October and November, when 12, 51, 27, 25 and 12 cases respectively, were notified. The number of deaths from this fever in the Infectious Hospital of patients sent in from the out-townships was 4, viz.

2 from the township of Waterloo-with-Seaforth, and 2 from Litherland; 1 of these deaths occurred in March, 2 in September, and 1 in October. Excluding these 4 deaths, the numbers dying in the above months of Bootle persons were as follows:—July 2, August 4, September 7, October 2, and November 1. The remaining 4 deaths of Bootle persons were as follows:—1 in February, 1 in June and 2 in December. It will be noticed that the largest number of notifications were in August, but the largest number of deaths was registered in September. As a rule enteric fever is always more or less prevalent in Bootle in the autumnal months, and August and September are generally the months in which the largest mortality from this disease occurs. Table No. 2 shows the number of cases notified in each month of the year. The total number of deaths was nearly the same as the average of the preceding 10 years, being 0·7 less. The death-rate (0·38) in Bootle was slightly less than it was in 1896, but exceeded the average of “fevers” in the 33 large towns by 0·20. The number of enteric cases admitted into hospital from Bootle was 84, and from the out-townships 20, 13 of which were from Waterloo and Seaforth, thus the total number of enteric cases admitted was 104, or 2 less than in 1896. The number of cases admitted from Bootle however was 6 more, and the number from the out-townships 8 less than in 1896. The total number of deaths from this fever in hospital was 11, 7 of which were of residents and 4 non-residents, the total number 11 being 10·57 per cent of the entire cases admitted, which was 3·5 per cent less than in 1896. The percentage of deaths from all the notified cases in Bootle (including the 5 cases of continued fever notified) was 13, and was thus 2·4 per cent in excess of the entire cases admitted to hospital. The percentage of the 7 deaths of Bootle persons to the 84 Bootle cases treated in the hospital was 8·3. If the 7 deaths of Bootle persons dying in hospital are deducted from the total number of deaths (20) of Bootle persons dying from this fever, this will give a difference of 13 persons dying out of the 70 persons treated outside the hospital, and the percentage of these 13 deaths to the 70 cases treated outside is therefore 18·5 or *10 per cent in excess of those treated in the hospital*, which proportion is exactly the same as that of last year. I think it is a very gratifying fact to note that for the last two years the percentage of mortality from this fever in hospital has been so much as 10 per cent less than that from cases treated outside, notwithstanding the more serious character of a large proportion of the cases admitted. As the diagnosis of enteric fever in the early stages of an attack is often very obscure, and as medical practitioners as a rule often think it their duty to notify cases

as soon as possible, errors in diagnosis must occasionally occur without any fault being attached to the notifier. These errors, however, would make the percentage of mortality outside a hospital still higher. On the other hand there is no doubt that the difficulty of treating these cases outside a hospital, particularly amongst the poor is very great, especially in a town like Bootle, in which there are no "district nurses" to assist ignorant persons in carrying out the orders of the medical attendant with respect to proper diet, cleanliness and ventilation of the small and often crowded houses, directions as to good nursing, &c. The large proportion of cases (more than one half) removed to hospital assisted I believe very materially in lessening the mortality from this disease during the past year. As enteric (or typhoid) fever is a disease that is "endemic" or always present more or less in the autumn in Bootle, I think it my duty to make a few remarks with regard to the origin or causation of it. In the first place, I may say that I believe all the most skilled sanitarians are agreed that typhoid fever is due to an organism called the "bacillus typhosus," which is well-known to be capable of growth in the soil, and that the most essential condition for the production of the disease is pollution of the soil by means of human fæcal matter, and this pollution in Bootle as in many other towns is generally that from privy-middens, the contents of which being afterwards infected. These receptacles of filth are in most instances built without any cement, and therefore allow the liquid contents to percolate through the brick-work (the bricks themselves being often soft and porous), and thus saturate and contaminate the sandy soil surrounding the privies. I fear that in Bootle, the soil around these middens has become so polluted by these offensive percolations that it will not be able to properly clear itself for some considerable time, even where the middens have been converted into w.c.'s. Therefore I think we must not look for any very rapid diminution of typhoid cases, but that it is necessary to remove and convert these middens *into w.c.'s I have not the slightest doubt*. I may mention here that Dr. Robertson, late Medical Officer of Health of St. Helen's, had during the past year made numerous experiments in order to show the causes which are in operation in bringing about typhoid fever outbreaks. In the first place he clearly shows that the prevalence of typhoid fever is not influenced by the temperature of the air above, but that there is a relationship between the soil temperature and this disease, and he believes that when the temperature of the soil at 4 feet below the surface reaches 52° Fahr. (or higher in some localities) the organism called the "bacillus typhosus" begins to grow and increase rapidly, and that it generally reaches its utmost activity

about the month of September, for it is in that month that usually the largest number of cases occurs, and after that month on the lowering of the temperature the numbers appear to decline. He also alluded (in his annual report for 1896), to the strong probability that typhoid organisms lurk about in soil of infected areas from year to year, but he has since proved by experiments that "on earth much contaminated with refuse, the bacilli died down in the winter months only to multiply freely in the summer." This is as I have often suspected, and proves the strong vitality of these bacilli, and how difficult it is to eradicate typhoid germs from polluted soils, when once they have been deposited in it. With regard to the source of infection I will again quote from Dr. Robertson's interesting report. "As in former years the infection in the great majority of cases of typhoid fever could not be traced to previous cases. In this large number the infection was probably derived indirectly from areas of polluted and infected soil, the infection being probably swallowed or inhaled directly along with dust in the air, or indirectly, by means of food or water which has been specifically contaminated by dust from these infected areas." A polluted water supply necessarily (as in the case of Maidstone) would cause a fearful epidemic of this disease, but obtaining as we do such a wholesome and abundant supply of pure water from the Liverpool Water Works, which is regularly analysed, there is very little danger of the disease being caused by drinking water in Bootle. In these remarks I have entered rather fully into the causation of typhoid fever, in order to show that the only way to eradicate the organism "*bacillus typhosus*" from the soil surrounding the cottages of the poor, is the conversion of the remaining privy-middens into w.c.'s, and when property owners talk of the expense of these conversions, they should know something about the expense of a serious epidemic of typhoid, when it attacks a community, such as Maidstone for instance. I will therefore mention here that the Mayor of Maidstone has recently stated "that the Council had overdrawn at the bank to the extent of £14,000 on account of the epidemic, and that another £6,000 would probably be required. It was pointed out that if the total expense were spread over a period of 20 years, it would necessitate a rate of $2\frac{1}{2}$ in the pound per annum.

DIARRHŒA.

I have again to direct special attention to this very important zymotic, and to point out that although every Medical Officer of Health ought to take every precaution to lessen as much as possible the prevalence of typhoid fever,

yet when one considers the much larger mortality that occurs, as a rule, every year from this fatal infantile zymotic, one cannot help feeling that every effort should be taken to prevent the enormous proportion of deaths, that, year after year, increase our zymotic death-rate, and which, last year, increased our total death-rate nearly 3 in the 1000 of the estimated population, nearly all the victims being helpless infants. The mortality from this disease last year was exceptionally great, no less than 153 deaths having been registered from it, which number was 81 in excess (or more than double) of those registered in 1896, 46 in excess of the deaths registered from it in 1895, and 81.8 in excess of the average of the preceding 10 years. The zymotic death rate was no less than 2.94 per 1000, was 1.56 more than in 1896, and was 1.7 in excess of the average death-rate of the 33 large towns. The disease always commences suddenly to be epidemic in Bootle, when the temperature of the subsoil, 4 feet below the surface, reaches about 56° Fahr. Last year, there were a few deaths registered from it in the 1st half of the year, viz.: 1 in January, then 1 in April, 3 in May, and 4 in June, making a total of 9 only, all being children under 5 years of age. The disease then became suddenly epidemic in July, no less than 54 deaths (including 3 adults) occurring in July, and 67 (including 5 over 5 years) occurring in August. The mortality dropped to 17 in September, only 1 infant died in October, there was no death from it in November, but 5 infants died of it in December. To show the importance of this zymotic, I may mention that the deaths from it during last year were nearly 8 times as many as the deaths from typhoid fever, and these deaths nearly all occurred in the 3 months, July, August and September. The principal causes of infantile diarrhœa are, *high earth-temperature, artificial feeding, and the neglect of proper sanitary provision*, and I will now make a few remarks with regard to these 3 causes. With regard to the first cause, I think Dr. Ballard's opinion is now generally believed and considered to be proved. Dr. Ballard's opinion was that the essential cause of diarrhœa is a micro-organism residing in dead organic matter in the superficial layers of the soil, and when at a depth of 4 feet below the surface the temperature has risen to 56° Fahr, this micro-organism becomes "air borne," and fastens on and pollutes milk and other forms of food, which when taken into the body acts like a poison in the system. I think its sudden onset alone would prove that some influence like this was at work. It can be imagined, therefore, how highly important it is that the soil around houses, especially cottage property, should be as free as possible from organic pollution. I desire also to point out that not only can this micro-organism escape from the soil

around dwellings, but it can actually be taken and forced into the *dwellings*, through "*ground air*" entering the basements of houses. It is well-known that when a house is unprovided with an impermeable basement, the aspirating power of the warm air of the house can draw up air out of the ground. It follows then that when this ground air is fouled, either from defective drains or from more or less polluted soils, it may contaminate the house and everything in it, including food. I believe Dr. Ballard and lately Sir R. Thorne Thorne, Medical Officer of Health of the Local Government Board, have insisted on the necessity of keeping ground air out of houses. How important it must therefore be that an impermeable basement to every house or cottage, through the laying of a bed of cement, should be insisted on. With regard to the second cause, viz.: *artificial feeding of infants*, careful investigation has shown that the mortality of children reared on breast-milk is small, but when artificial food is employed, the mortality at once begins to rise. According to Dr. Hope, Medical Officer of Health for Liverpool, "the deaths amongst children under 3 months of age, either wholly or partially fed on artificial foods, are fifteen times as great as they are amongst an equal number of infants fed upon breast milk. Between the ages of 3 and 6 months, for every infant getting breast-milk as part of its diet, who dies from diarrhœa, there are six who die amongst an equal number getting no breast-milk." These statements I believe to be absolutely correct, and I have no doubt are as equally applicable to Bootle as to Liverpool. As artificial foods, therefore, given to infants are often totally unsuited for them, and the milk obtained by the poor is not always of proper nourishing quality, and is often soured by uncleanly feeding bottles, how necessary it is that judicious advice in educating the poor in these important matters should be given by competent and trained persons. The Sanitary Inspectors, it is true, can often, when the disease is rife, give useful advice, which might often be the means of saving life, but what can one or two Sanitary Inspectors, unaided, do to mitigate the evils of artificial feeding and unwholesome surroundings, when they have all their other important duties to perform? In this direction, Lady Sanitary Inspectors, who have been properly trained in nursing, might be most useful, but surely when a disease so fatal in 3 or 4 months of the year, has to be combated, some effort should be made to start a proper organisation of trained district nurses by charitable and philanthropic persons in this Borough. With regard to the third cause, viz.: *the neglect of proper sanitary provisions*, I think I need hardly say much on this cause, as I believe the Sanitary Authority of this Borough is doing all that can be done, with respect to the

sanitary surroundings of the cottager's homes, and I am glad to find that the members of the Health Committee, undeterred by determined opposition, are, on their part, determined to abolish (as has been accomplished in Liverpool!) the obnoxious privy-midden, which has been condemned by every skilled sanitary authority. The automatic flushing tanks used in the sewers of crowded parts of Knowsley Ward, the regular flushing of other sewers, the erection of ventilating shafts, the paving of yards and passages, and the watering and scavenging of the streets, are well looked after by the Borough Surveyor. When the warm weather commences I intend to send out circulars, approved by the Health Committee, giving instructions on the feeding of infants, and to make arrangements with the Registrar to give a copy to each person registering the birth of a child.

INFLUENZA.

There was a slight prevalence of this disease in the spring of last year, one death having been registered from it in each of the three months, February, March, and April. There was also a death registered from it in October, but there was no marked prevalence of it at any time during the year.

PUERPERAL FEVER.

There were only 3 notifications of this fatal disease during 1897; 2 in February, and 1 in December; there were, however, 3 deaths from it in February, being 1 more than the notifications in that month. As poor women are often attended in their confinements by midwives, and as the disease is very contagious, there is often a difficulty in ascertaining the existence of the disease until a death occurs. I had this difficulty to contend with in February, but prompt action and the energetic measures taken were effectual in preventing the spread of the disease.

ERYSIPELAS.

As erysipelas is one of the notifiable diseases, I will note here that 67 cases were notified during 1897, of which only 2 proved fatal. In 1896, 62 cases were notified, but of these 4 deaths occurred.

OTHER ZYMOTICS.

The deaths from zymotic diseases of minor importance to those already commented on were as follows:—rheumatic fever 3, pyæmia and septicæmia 1, and there was no death registered as syphilis.

DISEASES OF UNCERTAIN OR VARIABLE SEAT.

The deaths from these diseases numbered 40, all being of persons above 5 years of age. The total number was 3 less than in 1896, and of this number, 25 (a decrease of 10) were of persons who died from cancer.

DISEASES TUBERCULAR.

The total number of deaths registered in Bootle from this class of disease was 119, this number being 30 in excess of that registered in Bootle in 1896. Of these 77 (an increase of 18) were due to phthisis, 29 to tabes mesenterica, 10 to tubercular meningitis, 2 to hydrocephalus, and 1 to tubercular peritonitis. There were also 25 deaths from phthisis of Bootle persons in the workhouses, but 6 persons died from phthisis in Bootle, “not belonging thereto,” so that the total number of deaths from *phthisis* of Bootle persons during 1897 ought to be really 96, which is an increase of 26 over the deaths from phthisis in 1896, and of 12 over those in 1895. The death-rate from phthisis in 1897 was 1·8 per 1000. It will thus be seen that there was an increase in the number of deaths from tubercular diseases in Bootle during 1897. This increase may be partly due to an increase of the population. There can be no doubt, I think, that some legislative effort should be made to prevent the dissemination of tuberculosis, and to bring it more under the control of a Sanitary Authority, as it is undoubtedly infectious. I do not see why it should not be dealt with in the same manner as other infectious diseases, particularly in its advanced stages. Even if a Sanitary Authority had the legal power to order the disinfection of rooms and clothes, where a fatal case had occurred, a step in the right direction would be gained. When one considers the amount of infectious material (sputum) that must be deposited, and when dried, spread through the air of rooms that have been occupied by consumptive patients, one almost wonders that the owners of property, for their own pecuniary advantage, do not insist on disinfection, and other preventive measures, for the benefit of subsequent occupiers of the

same rooms. Popular instruction, by means of leaflets, may be of some value, particularly to thoughtful persons, who will thus know the nature and means of propagation of this fatal disease, and by timely warning avoid the risk of infection ; but I believe legislative control is the only effectual remedy. Another important consideration in connection with this disease is its relation to food, and the liability of the tubercular bacillus being introduced into the body through milk or meat. Fortunately, the danger of milk from tubercular cows is obviated by boiling, and that of meat, to a great extent, by thorough cooking. In my opinion, however, it is better to condemn the whole carcase of an animal, if any decided sign of tubercle is found in it, for one can never be certain that the heat employed in cooking has thoroughly destroyed tubercle, if it is deep-seated next the bone in a joint of meat. Great care also should be taken by cattle-breeders and cowkeepers to keep tubercular cows out of a herd or a shippou, for the disease is known to spread rapidly when once introduced amongst a number of cows, and it will thus bring great pecuniary loss to the owner, and a danger to the purchaser. There is, I think, no doubt that insanitary shippous largely conduce to the development of this disease, for the disease is known to be rare in well-lighted, well-ventilated, clean and sanitary shippous, whereas it is with ill-ventilated, dark, dirty, and insanitary shippous that tubercular diseases of the cow is associated, and it is when the udder of the cow is affected with this disease, that the danger of the contamination of the milk more especially arises. An interesting fact in connection with the construction and strict supervision of shippous was pointed out in a report by Dr. Hope, in the spring of last year. An investigation by bacteriologists proved " that 2·8 per cent. of the samples of milk taken from city shippous in Liverpool, and examined by them, contained the tubercle bacillus. This is a matter of importance, and indicates the necessity for a rigorous application of the bye-laws. But important as this percentage undoubtedly is, it sinks into insignificance beside the large proportion of milk infected with tubercle which is sent in from the country, which is no less than 29·1 per cent." This astounding fact must prove, I think, the insanitary condition of many country shippous, and demands the serious attention of those who are responsible for the administration of those shippous.

DISEASES OF THE BRAIN, SPINAL MARROW, &c.

The number of deaths registered from this class of diseases in 1897 was 98. The total number was 35 less than in 1896, and the number of children

was 22 less than that in 1896. The number of deaths from these diseases in 1897 was almost exactly the same as in 1895. The deaths of infants registered under the vague and unsatisfactory term of "convulsions," numbered 30, this being a decrease of 7 when compared with those in 1896.

DISEASES OF THE HEART AND BLOOD VESSELS.

The number of deaths registered from these diseases was 38, which number was 4 less than that in 1896. There were, however, 8 deaths of persons belonging to Bootle occurring in the Workhouses, but 2 persons died in Bootle from these diseases, "not belonging thereto." The difference of these numbers would thus add 6 to the 38 deaths mentioned.

DISEASES OF THE LUNGS AND AIR PASSAGES.

The total number of deaths from these diseases registered in Bootle in 1897 was 233, which number exceeded that in 1896 by 21. Of the total number 122 were children under 5 years. The largest number of deaths occurred in January, October, November and December, when 22, 22, 25 and 37 deaths, respectively, were registered. As, however, 25 Bootle persons died in the Workhouses "outside the district," and 6 persons died in Bootle (from these diseases) "not belonging thereto," the difference (19) ought to be added to the 233 registered in Bootle, and thus increase the total mortality from these diseases to 252, which number exceeded the total mortality in 1896 by 23.

OTHER DISEASES.

The deaths from "other diseases" in 1897, when compared with those in 1896, were as follows:—Diseases of kidneys, bladder, &c., 20, a decrease of 1; diseases of uterus, child-birth, &c., 5, a decrease of 4; diseases of stomach, liver, &c., 64, a decrease of 7. In addition, 5 deaths were registered from diseases of the bones, &c., 2 from diseases of the lymphatics and glands, 5 from diseases of skin, 14 from premature birth (a decrease of no less than 22), 24 from atrophy and debility (a decrease of 8), and 20 from old age and natural decay, an increase of 10 (double). The deaths of 18 persons (an increase of 2) were registered during the year, aged 80 and upwards, viz.:—1 in January, 2 in February, 1 in March, 5 in April, 2 in May, 2 in June, 1 in August, 1 in September, 2 in October, and 1 in December. Of these 18 old persons, 2 died aged 80, 2 aged 81, 2 aged 82, 4 aged 83, 1 aged 84, 3 aged 85,

2 aged 86, 1 aged 87 and 1 aged 89. In addition to these old persons who died in Bootle, 2 old Bootle persons died in Walton Workhouse, 1 aged 84 and 1 aged 88. I must again make the same remark as I did last year with respect to these old persons, viz., that the friends or relatives of these old people often register their deaths incorrectly, although, I believe, from a long experience, that, as a rule, the age is much more often understated than the reverse.

DEATHS THROUGH VIOLENCE, &c.

Seventy-two deaths through violence, &c. occurred during the year, being a decrease of 3 when compared with the number from the same cause in 1896. In addition to these deaths, 4 deaths were registered from "natural causes," the precise cause not being shown. Of the 72 deaths 17 were of children under 5 years of age, and the causes of these deaths were as follows:—34 (a decrease of 10) were due to *injuries* either from accidents or negligence, 12 were from "*drowning or effects of immersion*," 10 were from "*burns*" or "*scalds*," 4 were from "*suffocation*," 6 were from "*suicide*," 1 from "*poisoning*" (whether suicidal or accidental not shown), 1 was from "*manslaughter*," 1 from "*misadventure*" and 3 persons were found dead, the cause not being clearly proved. During the year, 32 deaths (a decrease of 12) were registered "*uncertified*" by any medical practitioner, and of these 19 were children under 5 years of age. The percentage of these deaths was a little over 3, and was about 1 per cent less than that of 1896.

INQUESTS.

The number of inquests held during the year was 78, a decrease of 2 when compared with the number in 1896. The number of inquests in each month was as follows:—January 5, February 3, March 6, April 8, May 4, June 10, July 6, August 6, September 8, October 7, November 5 and December 10. It will thus be noticed that about 7·5 per cent of the deaths in this borough formed the subject of legal inquiry.

HORSE AMBULANCE FOR ACCIDENTS, &c.

This ambulance carriage was presented to the Bootle Borough Hospital in 1889, and is used entirely for the removal of accidents and other urgent cases to this hospital. It is worked by the members of the Fire Brigade who

have nearly all passed the examination and have become members of the St. John's Ambulance Association. The advantages of the system by which this ambulance is worked are, that as these firemen have received a thorough training and have acquired a knowledge of rendering "first aid" to injured sufferers, and also as these sufferers can be removed in a very rapid manner to the hospital, it has not been thought necessary to send a house surgeon to accompany the ambulance. This invaluable carriage can be turned out *in less than a minute* after intelligence of an accident has been received, in fact it can be sent in the same expeditious way as an engine is worked when it is sent out to a fire after the receipt of an alarm. I will now briefly mention the following facts reported to me by Mr. Roberts, the Superintendent of the Brigade, in order to show the great usefulness of the ambulance and the serious nature of the accidents, &c. removed. The following is a list of ambulance cases dating from January 1st, 1897 to January 1st, 1898. Calls received, 316 between 6 a.m. and 6 p.m., and 129 between 6 p.m. and 6 a.m. Total 445. The accidents and urgent cases were as follows:—51 compound fractures and 114 simple fractures, 87 wounds, 26 fits, 18 scalds and burns, 6 dislocations, 9 drowning and 3 poisoning cases, 11 immersion cases and 120 other injuries, &c.

PUBLIC BATHS AND GYMNASIUM.

I now submit the Report of the Manager of these Baths, Mr. MacMahon—

These Baths still continue to be very much used by the inhabitants of the Borough. During the year 1897, they were used by male bathers 66,245 times, and by female bathers 8,066 times, making the total number of attendances of bathers for the year 74,311. That the attendances at the baths during the different seasons of the year may be clearly seen, I submit a tabular statement of the attendances during each quarter of the year:—

Quarter ending March	...	Males	2,878	Females	146	Total	3,024
„ June	...	„	27,947	„	3,609	„	31,556
„ September		„	30,566	„	4,140	„	34,706
„ December		„	4,854	„	171	„	5,025
Totals for the year, 1897			<u>66,245</u>		<u>8,066</u>		<u>74,311</u>

The salt water supplied to the baths is of excellent quality. The increased popularity of these baths may be seen from the fact that the average yearly attendances for the first five years the baths were open (1888 to 1893) was 52,069, while that for the last four years (1894 to 1897) was 67,475. During the past year "Life-Saving Drill" has been systematically taught at these baths. In October last, 12 of the Bootle Swimming Club, after examination, obtained certificates of efficiency in "Life-Saving Drill," in November 16 of the Police Force obtained certificates of efficiency, and one member obtained a medallion for extra efficiency; in December 8 of the Bootle Swimming Club obtained medallions for extra efficiency in the drill. The school children are greatly encouraged to use the bath, and a very large number of them swim well. The receipts for the year were £966 1s. 3d.

Gymnasium—The gymnastic classes continue to be well attended, and the exercises are not only much enjoyed by the young people, but they are manifestly beneficial to them. Many of the children and young people show a decided improvement in their physique after attending the gymnasium for a short time. The numbers enrolled in the several classes up to December, 1897, were as follows: gentlemen 84, boys 39, ladies 160, school children 152, making a total of 435. (signed) T. MacMahon, Manager. As I am of opinion that public baths largely conduce to the health and comfort of the inhabitants of a large town like Bootle, I have submitted the Manager's report in extenso, as I think it shows conclusively that the benefits derived from the baths are fully appreciated by the public, and that in a large plunge bath of the size of the male bath (100 feet by 30 feet) not only can the art of swimming be efficiently taught, but also the best manner of saving life in water, through the "life-saving drill."

SANITARY WORK.

As usual a large amount of sanitary work was accomplished during the year, as Table No. 5 containing the Sanitary Inspector's Report will fully show. The mode of procedure with regard to infectious diseases is as follows:—As soon as possible after the receipt of a notification, a fully qualified Sanitary Inspector visits the house and premises in which the case exists, and makes a thorough examination of all the sanitary arrangements thereof. Information is thus obtained whether the case requires isolation or not, and if it is found that the case is not properly isolated, a recommendation is made that the patient should be removed to the Corporation Hospital in Linacre.

The names of all children in the house who are attending school, and also the places of employment of the members of the family are also obtained, and the School Board Authorities are communicated with, and also the employees if it is thought necessary to do so. The Librarian of the "Free Public Library" and the House Surgeon of the Bootle Borough Hospital are also informed of all infectious cases notified to me. The source of the milk supply is also obtained, and a printed copy of "suggestions for the prevention of infectious disease" is left with the family. In short all the usual precautions are taken to prevent the spread of the disease, and the premises are daily visited, when the case is one of scarlatina or small-pox, to make sure that no fresh case has occurred. When it is remembered that 245 cases of scarlatina, and 154 of enteric fever were notified, besides other cases of an infectious or contagious character, and that 133 cases of scarlatina and 84 of typhoid were removed to hospital by the "horse ambulance for infectious cases," a fair idea of the amount of sanitary work performed during the year from these infectious cases alone, can be readily imagined.

NUISANCES.

During the year nuisances were reported to exist in 3,299 private houses. Of this number 462 houses were inspected by special request of tenants. The nuisances dealt with include defective drainage, water-closets, sinks, bath and wash-basin wastepipes, roof downspouts, yard surfaces and ventilation, filthy houses, accumulation of filth and manure, stagnant water, other refuse matter, fowls, and animals improperly kept. Re-inspections of these premises were made, and the necessary steps taken to abate the nuisances. Owners were summoned in 7 instances for non-compliance with notices.

COMMON LODGING HOUSES.

The Chief Sanitary Inspector reports that the number of these houses registered in Bootle under the Public Health Act at the beginning of the year was 211, and that the number of houses newly registered during the year was 54, but it appears that 46 houses were vacated by the keepers, so that the number of houses now on the register is 165. The inspector also reports that the number of day and night inspections was 1818, and that the number of infringements of the bye-laws was 205, of which 13 were brought before the magistrates.

INSPECTION OF DAIRIES, COWSHEDS, AND MILK SHOPS.

The number of persons on the register for the sale of milk during the year was 123. The number of inspections made was 496. The number of notices served for defects found to exist was 73, and the number of dairies in which fever occurred during the year was 3. The great power of absorbing impurities that milk possesses, and the fact that hot weather hastens fermentation and decomposition in milk, causing it rapidly to become sour and objectionable, and also that milk is a good medium for disease germs to grow in, all tend to prove how very necessary it is to carefully prevent it from becoming contaminated. Defective ventilation and insanitary conditions of shippsons have already been alluded to in this report, as producing tuberculosis and other diseases, and therefore in a borough like Bootle, in which infantile diarrhœa is always more or less prevalent in the summer, I think I cannot exaggerate the importance of strictly enforcing the regulations with respect to the dairies and shippsons, and especially the ventilation and the cubic feet of space for each cow.

INSPECTION OF CATTLE SHIPS.

These inspections are made by Assistant Inspector Owens, and are very important, because if the "cattle fittings" are not properly cleansed and disinfected, and are sold to breeders of cattle in the interior of the country, cattle disease might thus be introduced amongst the flocks and herds and thus destroy a number of animals. During the year 488 of these inspections were made, and legal proceedings were taken in one case, and the responsible person was fined.

INSPECTION OF CANAL BOATS.

As the Leeds and Liverpool Canal runs through this Borough, inspections of canal boats have to be made, although Bootle is not really a registering district. These inspections are made by Assistant Inspector Owens, under the direction of the Chief Sanitary Inspector. During the year 125 inspections were made, 2 infringements were reported, and one case was brought before the magistrates, and the master of the boat was fined. In the other case, notice was served upon the owner, who remedied the defects reported.

WORKSHOPS.

The important and responsible duty of visiting and inspecting the workshops in this Borough is intrusted to Inspector McCulloch. He reports that the number of workshops on the register last year was 91. The defects reported were 15.

INSPECTION OF BAKEHOUSES.

Accompanied by two Sanitary Inspectors I made an inspection of all the bakehouses in the Borough on 8th September. I found 41 bakehouses in use, and a few (7) not used. 26 of them required cleansing and lime-washing, and notices were sent out requiring this to be carried out. In 13 bakehouses we found sanitary defects, which were afterwards remedied. During our inspection we carefully noted the water supply and ventilation, and every bakehouse that was free from effluvia, drains, privies, and other nuisances. In my opinion every bakehouse should be situated on or above the ground-level, for when they are situated below the level of the ground, dirt and rubbish from the road accumulate in the areas, which, when the windows are opened for fresh air, or when panes of glass are broken, are blown into the bakehouses, and consequently (often) on to the flour and dough. I observed, also, that two bakers were smoking tobacco at the time they were making the bread; this is, in my opinion, a very objectionable practice, for many obvious reasons.

FOOD INSPECTIONS.

During the year 6 seizures of unsound food were made, the total amount being about 108 lbs. The particulars of these seizures are as follows:—

- (1) 80 lbs. of sausages from shop in Derby Road.—Butcher fined £5 and costs, or a month's imprisonment.
- (2) 5½ lbs. of meat from shop in Marsh Lane.—Butcher fined 20s. and costs.
- (3) 6¼ lbs. of meat from shop in Derby Road.—Butcher fined 40s. and costs, or 14 days' imprisonment.
- (4) A considerable quantity of unsound food was destroyed, by consent of the owners, without the formality of a magistrate's order.

SYSTEMATIC INSPECTIONS.

Systematic house-to-house inspections have been carried on during the year, the result of which will be seen on referring to Table No. 5. When I have considered it necessary, I have accompanied the inspector in these inspections. The inspections I have thus made have been principally in reference to the sanitary defects of the cottage property, and notably the condition of the privy-middens, 714 of which I have inspected during the year. I have also, as in former years, at various times made other inspections, when insanitary conditions of property, &c., have been reported to me, and have inspected all the bakehouses, and many of the shippens, &c. The results of these inspections I have duly reported to the Health Committee at their fortnightly meetings.

REMOVAL OF EXCRETA AND REFUSE MATTER.

The Borough Surveyor (Mr. Crowther, C.E.) has supplied me with the following information:—During the year 1897, 132 boat-loads, each containing about 50 tons, amounting altogether to 6,600 tons of “manure,” have been sent by canal boats into the rural districts, and sold to the farmers. 41,753 ashpits were emptied, and 12,052 tons of refuse matter have been burnt in the “destructor.” This quantity of refuse matter burnt exceeded that in 1896 by 943 tons, and, in my opinion, the destruction of this refuse matter, consisting of the contents of dry ashpits and shop garbage of all kinds, is an invaluable method of disposal of it, more especially as the “clinkers” remaining after the cremation can be utilised for making foundations of roads, and concrete flags for paving.

WATER SUPPLY.

Table No. 8 gives the quarterly analyses of the soft and hard waters supplied by the Liverpool Water Committee to Bootle and other districts, the Bootle Wells having been permanently closed for nearly two years. The water now supplied to us is derived principally from Vyrnwy and Rivington, these two soft waters being mixed with a small proportion of hard water from one or more of the Liverpool wells. The Liverpool Water Committee has the entire control of the water supply, except that the Bootle Town Council are allowed two representatives on this Committee. The present water supplied

to Bootle is a constant, abundant and uniform supply, and as samples of it are regularly analysed every quarter, it ought to be, and I believe is, pure and wholesome, and certainly more suited for domestic purposes than the hard water from the Bootle Wells.

FLUSHING.

The water used for this purpose is principally salt water, and during the year 5,907 house drains were flushed. A large number of *automatic flushing tanks* are fixed (underground) to passage sewers at the north end of the borough. They flush most effectually, do their work remarkably well, and do not easily get out of order. The capacity of these tanks is between 250 and 300 gallons, and being situated below the flags, cannot very easily be tampered with by ignorant or mischievous persons. I may mention here that the members of the Health Committee, recognising the great importance of properly flushing drains, have lately passed a resolution that all the private drains in the Borough be flushed annually. This will cost rather a large sum of money, but I believe it will be money well spent.

ADULTERATIONS.

The Chief Constable (Mr. James Cumming) and Inspectors Leslie and Ferguson have the carrying out of this act during the year. Table No. 7 gives the number of samples taken and sent to the Public Analyst, and also the descriptions of the food, &c., submitted for analysis, the result being that out of 107 samples taken, only 5 persons were proceeded against, 3 being convicted and 2 discharged. The 5 prosecutions were all milk cases. It appears, however, that 3 persons have been proceeded against under the Margarine Act, 2 of whom were convicted.

THE DERBY PARK AND RECREATION GROUNDS.

The new Derby Park improves in appearance and beauty every year, under the able superintendence of Mr. Drysdale and supervision of the Borough Engineer, Mr. Crowther. A large number of people have visited it during the year, particularly in the summer and autumn months, when the park is often crowded. The large ornamental lake has, as usual, been a great attraction,

principally through the sailing of model yachts. There are also 3 or 4 glass-houses containing a large number of hot-house plants, &c., a large new greenhouse having been added during the past year. The bandstand is used regularly during the summer months, bands of music being engaged to play every week. Besides this park there are the North and South Recreation Grounds, where cricket, football and other sports are indulged in, the Bootle Cricket Ground in the South Recreation Ground being one of the best around Liverpool. In my opinion the importance of providing parks and recreation grounds in large open spaces cannot be exaggerated or too highly commended. The inhabitants of a town like Bootle are thus enabled to enjoy healthy recreation, and the poorer classes by getting away from their crowded localities and breathing pure air, are greatly improved thereby in their general health, and by athletic exercises and games their muscular system is developed and physical stamina improved.

SANITARY PROCEEDINGS AND ADVICE, &c.

In accordance with Act 14, Section 4, of the Local Government Board's Order, I will now shortly refer to "Proceedings relating to conditions dangerous or injurious to health, in which I have taken part or advised" the Sanitary Authority during the year. I have regularly reported every fortnight during the year on the vital statistics of the borough, the sanitary requirements and the works accomplished, together with special reports when necessary. The sanitary proceedings have I think been fully commented on in the previous part of this annual report, and it will therefore be unnecessary for me to make any further remarks on this subject. I regret I cannot report a decrease in the death-rate during the past year, although there was really very little difference in the death-rate of last year and that of the previous year, the death-rate in 1897 being 20·32, whilst that in 1896 was 20·13 per 1,000. Both years however show decreased death-rates when compared with 1895, which was 21·55 per 1,000, and if it had not been for the large infantile mortality from diarrhoea, the death-rate for 1897 would have been considerably lower than either of the two previous years. The most important sanitary proceeding during the year was that relating to the conversion of privy middens. The Local Government Board having as the result of their inquiry into the appeals of certain owners against demands for the payment of the cost of conversions in a number of cases, issued an order which reduced the amounts demanded by one half, the Corporation applied for a provisional

order conferring further powers upon them in regard to the provision of w.c.'s, and enabling them in certain circumstances to contribute to the cost of conversions. The provisional order was granted on the 11th May, 1897, and came into operation in August on its confirmation by Parliament. Under this order the owners of property have a right of appeal to the magistrates instead of the Local Government Board. I may here mention that in addition to the above, it also amends in some respects the power of the Corporation with regard to the length of back passages, and the strength of timber in the floors of new buildings. Conversions of these middens are still going on, and I am informed by the Borough Engineer that 171 were converted last year, which appears to be comparatively a small number when it is considered that 714 inspections were made of these receptacles.

(Signed) R. J. SPRAKELING,

14th March, 1898.

Medical Officer of Health.

A. TABLE OF DEATHS during the Year 1897, in the Urban Sanitary District of Bootle (County Borough); classified according to DISEASES, AGES, AND LOCALITIES.

NAMES OF LOCALITIES adopted for the purpose of these Statistics; public institutions being shown as separate localities. <i>(Columns for Population and Births are in Table B.)</i>	MORTALITY FROM ALL CAUSES, AT SUBJOINED AGES.							MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.																							
	At all ages.	Under 1 year.	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and upwards	FEVERS.																							
								Smallpox.	Scarlatina.	Diphtheria.	Membranous Group.	Typhus.	Enteric or Typhoid	Continued	Relapsing	Fueral.	Cholera.	Erysipelas.	Measles.	Whooping Cough.	Diarrhoea & Dysentery.	Rheumatic Fever.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Influenza.	Injuries.	All other Diseases.	Total.		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
WARDS.								Under 5		2										3	5	37			36	1			2	33	120
	222	80	40	6	5	62	29	5 upwds						1					1			2	3	13	29	7		1	45	102	
								Under 5				1								5	4	63			48					62	193
Knowsley	345	137	56	17	15	87	33	5 upwds		6				3								3		28		11	2	5	59	152	
Stanley	359	129	61	17	12	90	50	5 upwds		1	2	2			1					6	4	44			34	1	2	5	89	190	
Public Institutions: Bootle Borough Hospital	70	1	11	9	5	39	5	5 upwds						3					1		1	3		28	41	12		7	72	169	
Corporation Hospital for Infectious Diseases								Under 5																	2				7	3	12
								Under 5	8					1																	10
	25		10	6	5	4		5 upwds	3	1				10																	15
Mortuary	16	2		1	1	10		Under 5																				1	1	2	2
TOTALS	1037	349	178	55	43	292	119	5 upwds	9	4	6			4						14	13	144			5	121	2	2	15	188	527
								Under 5	4	1				20			3		2		1	9	3	72	110	36	2	55	192	510	

The subjoined numbers have also to be taken into account in judging of the above records of mortality.

Deaths occurring outside the district among persons belonging thereto.	74		4		3	44	23																							
Deaths occurring within the district among persons not belonging thereto	51	2	4	6	4	33	5						3																	

R. J. SPRAKELIN, *Medical Officer of Health,*
14th March, 1898.

Area and Population of the District or Division to which this Return relates—
Area in Acres, 1,590. Population (1891) 49,217. Estimated (1897), 52,000.
Death Rates—General 20·32 per 1,000. Infants 199·6 per 1,000 Births Registered.

B. TABLE OF POPULATION, BIRTHS, AND NEW CASES OF INFECTIOUS SICKNESS, coming to the knowledge of the Medical Officer of Health, during the year 1897, in the County Borough and Urban Sanitary District of Bootle; classified according to Diseases, Ages and Localities.

NAMES OF LOCALITIES adopted for the purpose of these Statistics: Public Institutions being shown as separate localities.	POPULATION AT ALL AGES.		Registered Births.	Aged under 5 or over 5.	NEW CASES OF SICKNESS IN EACH LOCALITY, COMING TO THE KNOWLEDGE OF THE MEDICAL OFFICER OF HEALTH.													NUMBER OF SUCH CASES REMOVED FROM THEIR HOMES IN THE SEVERAL LOCALITIES FOR TREATMENT IN ISOLATION HOSPITAL.														
	Census 1891.	Estimated of 1897.			(d)	(c)	FEVERS.													FEVERS.												
							Smallpox.	Scarlatina.	Diphtheria.	Membranous Croup.	Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.	Cholera.	Erysipelas.	Totals.	Smallpox.	Scarlatina.	Diphtheria.	Membranous Croup.	Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.	Cholera.	Erysipelas.	Other Dis.	Totals.	
WARDS.	(a)	(b)	(d)	(c)	1	2	3	4	5	6	7	8	9	10	11	12	13	1	2	3	4	5	6	7	8	9	10	11	12	13		
Derby.....		49,217.	1,748.	52,000.	Under 5	34	3			4							41		19	1										20		
Knowsley					5 upwds.	68	2			24	1				14		109		38		1	15								54		
					Under 5	23	1	3		2					3		32		13			2								15		
Stanley					5 upwds.	48	1		1	81	4		3		17		155		25		1	51							2	79		
					Under 5	30	2	1	1	4					2		40		16	1									2	19		
Totals in BOOTLE.....		49,217	1,748		5 upwds.	42	7	1	5	34					31		120		22	3	6	16								47		
					Under 5	87	6	4	1	10					5		113		48	2		2							2	54		
Seaforth-with-Waterloo.....					5 upwds.	158	10	1	6	139	5		3		62		384		85	3	8	82							2	180		
Litherland.....					Under 5														7			2								9		
					5 upwds.														21	1		11								33		
Ince Blundell.....					Under 5																	1								1		
					5 upwds.																	4								8		
West Derby.....					Under 5														1											1		
					5 upwds.																									2		
Totals from the out-townships {					Under 5														7			3								10		
Totals					5 upwds.														26	1		17								44		
		49,217	1,748	52,000	Under 5	87	6	4	1	10					5		113		55	2		5							2	64		
TOTALS		49,217	1,748	52,000	5 upwds.	158	10	1	6	139	5		3		62		384		111	4	8	99							2	224		

TABLE No. 1—Tabular Statement of the number of *Births* and the number of *Deaths* and *Infant Mortality* in each month in 1897, comparing these numbers with those in 1896; also the percentage of Deaths under 5 Years to total Deaths in 1897.

	BIRTHS.			DEATHS.			DEATHS 1896. Total.	INFANT MORTALITY			INFANT MORTALITY, 1896.	
	1897.		1897. Total.	1897.				Under 1 Year.	1 Year & under 5.	Percent'ge of Deaths under 5 Years to Total Deaths.	Under 1 Year.	1 Year and under 5 Years
	Males.	F'males		Males	Females.	Total.						
January ...	80	81	161	34	44	78	91	18	10	35.89	25	22
February ...	70	65	135	24	35	59	75	19	4	38.98	15	15
March.....	70	77	147	36	36	72	83	24	12	50	25	19
April	68	72	140	37	34	71	82	18	10	39.43	28	14
May.....	66	68	134	39	36	75	61	17	15	42.66	15	9
June	60	66	126	42	23	65	117	24	11	53.84	53	16
July.....	74	76	150	65	62	127	103	63	30	73.22	32	21
August ...	76	80	156	77	70	147	81	68	19	59.18	31	12
September	79	53	137	46	42	88	75	30	11	46.59	29	15
October ...	69	75	144	37	43	80	77	21	15	45	22	16
November.	84	90	174	35	35	70	95	22	15	52.85	27	11
December.	73	71	144	67	33	105	86	25	26	48.57	22	15
	869	879	1748	539	498	1037	1026	349	178	50.81	324	185

TABLE No. 2—Number of Infectious Cases notified to Sanitary Authority in each month of 1897.

Diseases.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Total.
Scarlet Fever.....	20	17	21	20	12	8	11	17	21	21	36	41	245
Diphtheria	—	—	—	2	5	—	1	—	5	2	—	1	16
Membranous Croup	—	—	—	—	—	—	1	—	1	—	1	2	5
Typhus Fever.....	2	5	—	—	—	—	—	—	—	—	+	—	7
Enteric (or Typhoid) ...	3	2	4	5	4	4	12	50	25	24	11	5	149
Continued Fever.....	—	—	—	—	—	—	—	1	2	1	1	—	5
Puerperal Fever.....	—	2	—	—	—	—	—	—	—	—	—	1	3
Erysipelas	7	6	5	4	7	3	5	3	5	7	8	7	67
Totals.....	32	32	30	31	23	15	30	71	59	55	57	57	497

TABLE No. 3—Shows the number of Deaths from the Seven Principal Zymotic Diseases in the Ten Years, 1887 to 1896 (inclusive) and in the Year 1897.

DISEASES.	1887.	1888.	1889	1890.	1891	1892.	1893.	1894.	1895.	1896.	Anal Av'ge of 10 Years, 1887-96	Total Deaths in 1897.	Deaths d'd'g & aud'g Dths from outside and inside Borough
Small-pox	—	—	1	—	—	—	4	—	2	—	—	—	—
Measles	33	14	30	16	35	7	21	15	2	31	20.7	14	14
Scarlet Fever	26	18	8	27	31	32	20	36	13	20	23.1	13	12
Diphtheria.....	10	7	12	6	7	14	3	5	12	7	8.3	5	5
Cont'd Fevers (Typhus	—	—	3	1	—	1	—	—	—	—	—	—	—
(Enteric or Typhoid)	8	19	17	8	13	16	46	33	23	24	20.7	24	20
(Simple Continued)	—	—	—	2	1	—	—	—	—	—	—	—	—
Whooping Cough	32	13	20	50	35	6	34	23	26	15	25.4	14	14
Diarrhoea	89	51	74	61	52	40	131	45	106	72	71.2	153	153
Totals.....	189	122	165	171	174	116	262	157	184	169	170.9	223	218

TABLE No. 5.

INSPECTOR OF NUISANCES REPORT FOR THE YEAR 1897.

 NUISANCES.

No. of Special Complaints	...	...	...	...	462
„ Houses Inspected and Re-inspected	...	...	...	...	5231
„ Nuisances Reported	...	...	...	...	3299
„ Inspections of Middens	...	...	...	...	714
„ Cases in which Summonses were issued	...	...	...	...	7

 DISINFECTION.

No. of Houses or parts of Houses disinfected	...	...	...	...	412
„ Notices sent to cleanse same...	...	...	...	...	412
„ Houses cleansed by the Corporation in default of owners	...	...	...	...	21
„ Times bath and disinfecting box was used by Staff	...	...	...	...	382
„ Inspections of Infected Houses	...	...	...	...	937
„ Fever Cases removed to Hospital by Ambulance—					
From Bootle	...	...	...	...	234
„ Waterloo-with-Seaforth	...	...	...	...	42
„ Litherland	...	...	...	...	9
„ Ince Blundell	...	...	...	...	1
„ West Derby	...	...	...	...	2
				—	288

 WORKSHOPS.

No. of Registered Workshops	...	...	...	...	91
„ Defects reported during the year after inspection of above	...	...	...	...	15

 COMMON LODGING HOUSES.

No. of Houses registered under the Public Health Act	...	...	...	...	211
„ Houses newly registered	...	...	...	...	54
„ Houses vacated by Keepers	...	...	...	...	46
„ Houses now on Register	...	...	...	...	165
„ Day and Night Inspections	...	...	...	...	1818
„ Infringements of Bye-Laws	...	...	...	...	205
„ Cases brought before the Magistrates	...	...	...	...	13

DAIRIES, COWSHEDS AND MILKSHOPS.

No. on Register	...	...	...	...	...	123
„ of Inspections made	...	...	...	...	...	496
„ „ Notices served for defects found	...	...	...	...	...	73
„ in which Fever occurred during the year	...	...	...	...	...	3

CATTLE SHIPS AND CANAL BOATS.

No. of Inspections of Cattle Ships	...	...	...	...	488
„ Cases brought before Magistrates	...	...	...	...	1
„ Inspections of Canal Boats	...	...	...	...	125
„ Infringements reported	...	...	...	...	2
„ Canal Boat cases brought before the Magistrates	...	...	...	...	1

FOOD INSPECTION.

Number of seizures of Unsound Food	...	...	...	...	6
Amount seized during the year	...	...	...	...	108 $\frac{1}{4}$ -lbs
Magistrates' Orders for Destruction	...	...	...	...	5
Number of Cases taken before the Magistrates	...	...	...	...	3

BAKEHOUSES.

No. of Bakehouses in use	...	...	...	...	41
„ Notices sent in reference to cleansing same...	...	...	...	...	26
„ Bakehouses found with sanitary defects—remedied	...	...	...	...	13

Table No 6—Legal Proceedings.

Nuisances—Failing to comply with notices with regard to defective drains, rain gutters, &c.	7
Depositing offensive offal, &c., in carriageway ...	4
Failing to comply with notices for removal of manure from stables	3
Unsound Food — Exposing for sale unsound food	3
Common Lodging Houses—Failing to cleanse	12
Overcrowding	1
Cattle Ships—Landing uncleansed cattle fittings from ships	1
Canal Boats—Contravening Section 3 of Canal Boats Act ...	1
Total ...	<hr/> 32

TABLE No. 7.

PROCEEDINGS TAKEN UNDER THE FOOD AND DRUGS ACT
FOR THE YEAR ENDED 31ST DECEMBER, 1897.

Nature of Samples taken.	No. of Samples taken.	No. of Persons proceeded against with the result of proceedings.		
		Total.	Convicted.	Discharged
New Milk	62	5	3	2
Butter	23	...	...	...
Coffee	10	...	...	...
Whisky	5	...	...	...
Vinegar	3	...	...	...
Rum	2	...	...	...
Lard	2	...	...	...
Totals	107	5	3	2

Three persons have been proceeded against under the Margarine Act, two of whom have been convicted.

TABLE No. 8.—ANALYSIS OF HARD AND SOFT WATERS SUPPLIED BY THE LIVERPOOL WATER COMMITTEE, TO LIVERPOOL, BOOTLE AND OTHER DISTRICTS IN THE FOUR QUARTERS OF 1897.

Description 1897.	DATES OF Analysis Report	Samples Drawn	Total Solid Matter in Solution	Organic Carbon.	Organic Nitrogen	Ammo- nia.	Nitro- gen as Nitrates	Total combined Nitrogen	Chlorine	Total Hard- ness.	Suspended Matters.
Tap in Dale Street	March 29th.	March 4th.	12·0	·242	·034	·003	·109	·146	1·6	6°	
Green Lane Well			32·4	·031	·029	·002	·482	·513	3·3	17°18	
Dudlow Lane Well			18·4	·042	·011	·002	·504	·517	2·9	7°28	
Windsor Well ...			38·4	·019	·017	·002	·576	·595	4·1	22°8	
Vrynwy ...	June 28th.	June 12th.	5·2	·223	·034	·003	·000	·037	1·0	2°6	
Ravington			9·2	·166	·056	·003	·000	·059	1·35	4°43	
Tap in Dale Street			9·8	·139	·039	·003	·057	·129	1·6	5°43	
Green Lane Well			31·6	·116	·031	·002	·468	·501	3·6	17°7	
Windsor Well ...			38·0	·034	·011	·002	·437	·449	4·15	22°28	
Vrynwy ...	Sept. 30th.	Sept. 7th.	4·6	·233	·045	·002	·000	·047	0·9	2°6	
Green Lane Well			32·6	·048	·022	·002	·445	·469	3·4	17°6	
Dudlow Lane Well			19·0	·083	·023	·000	·491	·514	3·0	8°6	
Windsor Well ...			37·0	·068	·022	·003	·467	·492	4·1	21°7	
Tap in Dale Street	Sept. 30th.	Sept. 7th.	10·4	·159	·046	·002	·051	·099	1·4	4°8	
Vrynwy ...	Dec. 23rd.	Dec. 6th & 7th.	6·4	·255	·021	·005	·000	·025	0·9	3°4	·182
Rivington			8·6	·279	·025	·008	·000	·031	1·35	3°4	·130
Green Lane Well			32·6	·073	·014	·006	·482	·501	3·41	17°1	·001
Dudlow Lane Well			18·2	·054	·021	·005	·437	·462	3·15	7°3	·001
Windsor Well ...			36·6	·075	·003	·005	·415	·422	4·11	22°3	·001

LOCALITIES.	JAN.		FEB.	MAR.	APRIL		MAY.	JUNE.	JULY		AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL		
	Un- der 5	5 up.			Un- der 5	5 up.												
Brought Forward	4	10	4	3	7	1	6	3	11	3	16	10	4	5	6	88	70	= 158
Boston Street	2	2	...	...	...	2	...	...	1	1	1	...	1	...	...	5	5	10
Boston Street	1	4	5
Boswell Street	...	1	...	...	1	...	...	...	1	...	...	...	...	...	2	4	2	6
Bowles Street	1	1	...	1
Brasenose Road, with Leslie's Buildings	1	...	1	...	1	...	...	3	...	1	...	3	6	9
Breeze Hill
Bridge Street	1	2	3	5
Brook Road	...	2	...	...	...	2	1	1	1	2	2	1	2	...	...	11	12	23
Brookhill Road	2	1	...	...	...	...	...	...	...	...	...	...	...	2	2	4
Browne Street	1	...	1	...	...	...	...	...	1	3	2	5
Browning Street	1	1	...	...	...	...	1	...	1	...	...	2	...	...	...	2	1	3
Bullen's Terrace	1	...	...	1	...	...	...	3	1	4
Bulwer Street	1	1	...	...	...	1	2	2	4
Burns Street	1	...	...	...	2	2	4
Byron Street	1	...	...	1	...	...	...	...	1	...	...	...	...	1	3	4
Cambridge Road	1	...	...	...	...	1	...	1
Camden Street	2	...	...	...	1	3	3	3
Campbell Street	1	3	1	...	...	...	...	3	1	4
Canal Street and View	2	...	...	...	2	...	...	1	...	9	2	11
Carolina Street	...	1	...	...	...	...	1	...	...	1	...	...	...	...	...	1	2	3
Cedar Street	1	...	...	...	...	...	...	...	1	...	...	...	1	2	1	3
Chapel Street	1	...	...	...	...	1	...	1
Chaucer Street	1	1	...	...	...	...	2	3	3
Chesnut Grove	1	...	...	1	1	...	...	...	...	1	5	1
Church View	1	...	...	...	...	3	4	7
Church St., Knowsley Wd.	1	1	...	1
Church St., Stanley Wd.	2	...	...	...	...	...	...	...	...	...	...	1	1	1	...	4	2	6
Clare Road	1	1	1
College View	1	...	...	1
Carried forward	9	17	7	6	11	5	11	12	10	12	29	13	11	9	16	159	129	= 288

LOCALITIES.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.	
	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.
Brought forward	9	17	7	6	11	5	11	12	10	12	9	2	19	13	11	9	11	13	8	16	12	159	129	=288		
Clifford Street	1	1	...	1	1	...	...	...	1	...	1	...	1	...	...	1	...	1	...	10	5	15		
Coleridge Street		
Concord Place	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Conway Street	...	1	...	...	2	...	...	...	1	...	...	...	1	...	...	...	...	1	...	1	...	9	2	11
Cornwall Street	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2
Cowper Street	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	3		
Cranworth Street	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3	5		
Crete Street	1	...	...
Cyprus Road	1		
Groxeth Road	1		
Davies Street		
Delaware Street	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Denbigh Street	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	3	2	5
Derby Rd., Stanley Wd.	1	1	...	1	...	...	...	...	...	1	...	...	2	1	...	...	...	1	1	...	...	2	3	5
Derby Road, Knowsley Ward	10	13	23		
Devon Street	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2		
Dorset Street		
Downing Road	...	1	...	...	...	1	...	1	...	...	1	...	1	...	...	...	...	...	1	...	...	1	6	6
Drake Street		
Dryden Street	1	...	...	1	...	...	1	...	...	...	...	1	...	...	...	1	1	...	3	4	7		
Duncan Street	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dundas Street	1	1	1	...	...	...	1	...	...	1	1	...	...	...	...	...	...	4	3	7		
Effingham Street	1	...	...	...	...	...	...	...	1	...	...	...	...	2	...	2		
Elizabeth Street	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1		
Elm Street	1		
Emley Street	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	4		
Ensor Street and Place	1	...	...	...	...	1	...	1		
Essex Street	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2		
Carried forward	10	22	9	11	17	0	15	18	16	18	1	36	23	16	14	15	16	16	12	20	14	215	180	=395		

LOCALITIES	JAN.		FEB.		MAR.		APRIL		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.	
	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.
Brought forward	10	22	9	11	17	10	13	18	16	8	13	8	32	14	36	23	16	14	15	16	16	12	20	14	215	180
Everton View	1	...	...	...	...	...	...	...	1	...
Exeter Road
Falconer Street	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...
Fernhill Road	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Flint Street	1	...	1	...	1	...	1	...	3	...	...	...	1	...	...	...	...	...	...	6	...	...
Florida Street	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	3	...	...
Formby Place	1	...	...	...	...	...	...	1	...	...
Garden Lane	1	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	1	4	2	...
Garfield Street	2	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	3	...	...
Gloucester Road	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
Gonville Road	1	...	1	1	...	...	...	...	...	...	...	1	...	...
Gower Street	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	1	...
Gray Street	2	...	...	...	...	1	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	2	...	...
Grimshaw Street	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Grove Street	1	...	...	...	...	...
Hamlet Street	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hawthorne Road, Stan- ley Ward	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hawthorne Road, Derby Ward	...	1	...	1	...	1	...	1	...	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Hammer Terrace and Place	1	4	2	...	...	...	1	9	...
Henry Street	1	...	...	...	...	...	...	...	...	...	2	...
Hertford Road	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hero Street	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Holly Street	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Holywell Street	1	...	...	...	...	...	...	...	...	...	...	...	...
Hood Street	1	...	...	...	1	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Hooton Place	1	...	...	...	...	...	...	...	...	...	...	...
Carried forward	10	26	10	16	19	15	17	23	18	8	16	46	16	43	25	22	17	20	20	25	14	25	20	271	221	492

1897.

LOCALITIES.	JAN		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.			
																									Un- der 5	5 and up.		
Brought forward	10	26	10	16	19	15	17	23	18	21	16	8	46	16	43	25	23	17	20	20	25	14	25	20	271	221	=492	
Hornby Road and Avenue	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1
Hornby Dock Cottages	2	6	...	1	1	5	1	5	1	5	...	4	1	3	1	8	...	6	...	6	1	3	4	6	12	58	70	
Hospital (B. Borough)	1	...	1	...	1	1	2	...	...	2	...	...	...	...	1	1	...	9	1	...	...	...	2	10	15	25	
(C. Infectious)	2	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	...	5	1	6	
Howe Street	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Irlam Road, Stanley Ward	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...	...	1
Irlam Rd., Knowsley Wd	...	...	...	1	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	2
Ivanhoe Street	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
Jersey Street	1	...	...	...	...	...	...	...	...	1	...	...	2	1	...	...	...	...	...	...	...	...	...	3	1	...	4
Johnstone Street	...	1	...	1	1	...	...	...	...	...	...	...	2	...	3	1	...	...	...	...	...	...	...	7	4	...	11
Keats Street	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	...	1	...	...	...	3	1	...	4
Keble Road	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	1	1	...	...	...	...	...	3	1	...	4
Kenilworth Street	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	1	2	...	3
Kent Street	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	1	1	...	1
Keppel Street	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	1	3	2	...	5
Kings Road	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kirby Place	1	...	1	...	1	1	1	5	2	...	7
Knowsley Road	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	...	...	...	...	...	1	1	...	1
Laburnum Place	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	1	...	2
Lamb's Terrace	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	2	2	...	2
Langdale Street	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Langton Dock Cottages	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	1
Linacre Lane and Village	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	3
Lincoln Street	...	...	...	...	...	...	1	...	1	1	...	...	1	...	...	2	1	...	3	...	...	...	...	3	1	...	4
Litherland Road	...	...	...	1	1	1	...	...	...	1	...	1	2	...	2	...	...	1	...	...	...	...	1	2	10	8	18
Lyons Street	2	3	1	...	...	...	...	...	...	1	1	...	...	1	3	...	...	...	...	...	2	...	1	9	7	...	16
Markfield Street	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	1
Carried forward	20	36	13	21	25	22	22	32	20	33	19	14	57	22	62	40	25	37	24	27	23	17	37	33	352	334	686	

LOCALITIES	JAN.		FEB.		MAR.		APRIL		MAY.		JUNE.		JULY		AUG.		SEP.		OCT.		NOV.		DEC.		TOTAL.		
	Un- der 5	5 up.																						Un- der 5	5 up.		
Brought forward	20	36	13	21	25	22	22	32	20	33	19	14	57	22	62	40	25	37	24	27	28	17	37	33	334	686	
Malcolm Street ..	1	..	..	..	..	..	..	1	..	..	..	1	1	1	1	..	..	..	..	..	..	..	..	2	1	3
Malta Road ..	..	1	..	..	..	..	..	..	1	1	..	..	..	..	1	..	..	..	..	1	..	1	..	1	4	5
Mann Street ..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	3	4
May Street ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	1	1
Marsh Lane, Derby Ward	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Marsh Lane, Knowsley Ward	2	..	..	2	1	1	..	..	..	..	1	..	4	..	..	1	2	1	1	1	..	1	1	10	7	17
Matthew Street ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	5	2	7
Merton Road, Derby Ward	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	2	2
Merton Road, Knowsley Ward	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Merton Road, Stanley Ward	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	1
Merton Grove ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mildmay Road ..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Mill Lane ..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	2	..	2
Miller's Bridge, with Balliol Terrace	..	..	..	..	1	..	..	..	..	1	1	1	1	..	..	..	..	..	..	..	..	..	1	4	2	6
Milton Street ..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	1	2	2	4
Miranda Road ..	..	..	..	1	..	..	1	1	..	..	..	1	1	..	..	..	..	..	1	..	..	..	..	2	1	3
Molyneux Street..	..	1	..	..	1	..	1	1	1	..	..	..	1	1	1	1	..	..	..	1	1	..	..	4	4	3
Moore Street ..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	4	1	..	..	1	..	..	..	1	7	3	8
Morningside Road ..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1	10
Mortuary ..	1	..	..	1	1	..	..	..	..	..	1	2	..	1	..	..	..	3	..	1	2	2	3	2	14	16
Nevada Street ..	..	..	..	..	..	..	2	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	1	3	4
New Street ..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	5	5	5
Norfolk Street ..	..	..	..	..	1	..	1	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	2	2	4
Oak Street ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	1
Carried forward	24	42	15	26	30	25	24	35	22	35	22	21	66	27	71	43	29	41	30	31	30	21	42	49	405	387	792

LOCALITIES.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.		TOTAL.	
	Un- der 5	5 up	15	26	30	25	24	35	22	35	22	21	66	27	71	43	29	41	30	31	30	21	42	40	Un- der 5	5 up.
Brought forward	24	42	15	26	30	25	24	35	22	35	22	21	66	27	71	43	29	41	30	31	30	21	42	40	387	792
Olivia Street	1	..	..	..	..	1	..	1	..	..	1	1	..	3	1	3	..	2	..	1	1	2	2	16	8
Oregon Street	1	..	1	..	..	..	..	..	1	..	..	1	1	..	..	1	..	..	..	1	1	3	5
Orlando Street	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	2	4
Oriel Road	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	2
Oxford Road
Park St., Place & Grove	1	..	1	..	1	1	..	..	1	1	1	2	..	..	..	..	..	..	..	..	3	2	8
Peel Road	1	..	..	..	..	..	1	..	1	..	1	..	1	..	1	2	..	4	5
Pembroke Road	1	..	..	..	..	..	..	..	..	..	1	..	..	..	1	1	1	1	..	..	..	..	..	1	2
Percy Street	1	..	..	..	..	..	..	1	..	..	..	..	..	..	2
Pine Grove	3
Pleasant Grove	1	1	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	3	5
Pleasant Place with Cross
Street and Place	1	..	..	..	..	..	..	..	1	..	..	..	..	1	..	1	..	..	..	..	1	1
Pleasant View	1	..	..	..	..	..	..	1	..	..	..	1	1	..	..	..	1	..	..	2	2
Pope Street	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Prince's Street
Queen's Road	1	1	..	..	..	1	..	..	..	..	..	1	..	1	..	..	..	..	1	..	1	1	2	6
Raleigh Street	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	1	2
Recreation Street	1	..	..	..	..	..	..	1	1	2
Regent Road, Stanley
Ward	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Regent Road, Knowsley
Ward	2	..	..	..	..	..	..	..	..	..	6	6
Rhyl Street	1	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	1	1
Richmond Grove	1	..	..	..	..	1	..	..	..	..	..	1	2	10
Rimrose Road	2	1	1	..	1	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	1	2	12
Roby Street
Carried forward ..	26	44	17	33	34	32	25	39	27	33	26	25	73	31	79	48	33	44	34	37	33	24	46	50	453	898

LOCALITIES	JAN.		FEB		MAR		APRIL		MAY		JUNE		JULY		AUG.		SEPT		OCT		NOV.		DEC.		TOTAL.	
	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.	Un- der 5	5 up.
Brought forward	26	44	17	33	34	32	25	30	27	33	26	25	73	31	79	48	33	44	34	37	33	24	46	50	453	445=898
Sandfield Place
St Alban's Road	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
St. Alban's Square
St. Catherine's Road	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
St. Edmund's Road
St John's Road and Terrace	..	1	..	..	..	..	..	..	..	..	1	1	3	..	..	2	..	..	..	..	..	..	1	..	4	5
Sandy Lane with Cross	1	1	..	..	..	1	..	..	..	1	2
View and Place	1	..	..	..	..	1	1	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	4	2
Salisbury Road	1	..	..	..	..	..	..	..	..	..	..	..	2
Seott Street
Sea View Road
Seaforth Street ..	1	1	1	..	..	..	..	..	..	1	..	1	1	1	..	..	..	..	..	1	..	..	2	..	7	4
Sheridan Place with Lee's Terrace	2	..	..	..	..	2	..	..	..	..	..	..	1	..	..	..	..	2	3
Shelley Street ..	1	..	..	..	..	..	..	1	..	..	1	..	2	..	1	..	..	..	..	..	1	..	..	..	4	4
Sidney Road	1	1
Smyna Street	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Southey Street	2	..	1	..	1	..	..	..	..	..	..	..	..	..
Speke Place	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Spring Grove	2	..	..	..	..	2	..	..	..	..	..	..	1	..	2	2
Stafford Street	1	1	1	..	..	1	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	3	4
Stanley Road, Derby	2	..	..	..	..	..	..	..	..	..	..	..	2	..
Ward
Stanley Road, Knowsley
Ward
Stanley Road, Stanley	1	..	..	..	..	..	1	..	1	..	1	..	1	..	..	..	5
Ward
Strand Road, Derby	1	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	2	3
Ward
Strand Road, Knowsley
Ward	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	3
Carried forward ..	23	47	19	35	35	34	26	43	30	40	32	29	86	34	82	56	36	46	35	42	35	28	49	51	493	485=978

